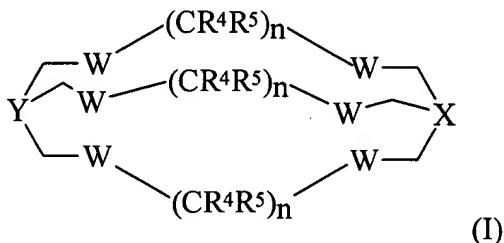


This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-2. (Canceled)

3. (Currently Amended) A compound which is capable of being radiolabelled of general Formula (I):



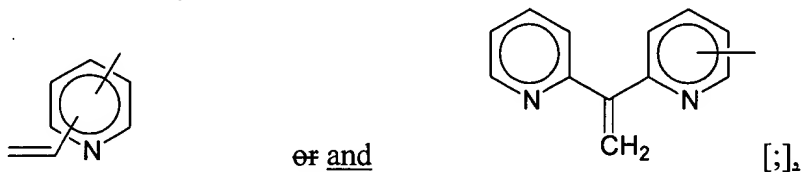
in which n represents an integer from 2 to 4,

where each R⁴ and R⁵ is independently selected from -H, CH₃, COOH, NO₂, CH₂OH, H₂PO₄, HSO₃, CN, C(=O)NH₂ and CHO;

X and Y are the same or different and are selected from the group consisting of C-R, N, P and C-Z in which R is selected from hydrogen, halogen, hydroxyl, nitro, nitroso, amino, optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, cyano, -COOR', COCOOR', NH-COCH₂Br, -NH-CO-CH=CH-COOR' in which R' is a hydrogen atom or alkyl group, wherein at least one of X and Y is C-Z;

W is selected from the group of NH, S and O; and

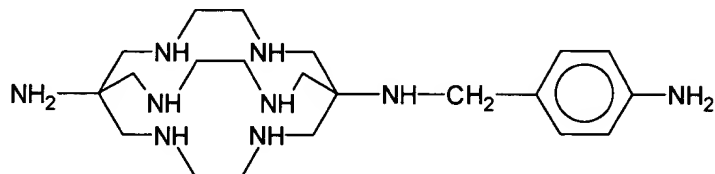
Z is a functionalised vinyl pyridyl group which is capable of binding said compound of formula (I) to a molecular recognition unit, selected from



or a pharmaceutically acceptable salt thereof.

4-29. (Cancelled)

30. (Previously Presented) A compound having the following structure:



wherein said compound is capable of binding to a molecular recognition unit.

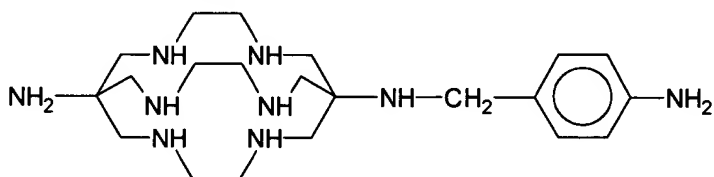
31. (Previously Presented) A compound according to claim 30 which is complexed with a metal ion.

32. (Currently Amended) A compound according to claim 31 ~~wherein the 30 which is~~ complexed with a metal ion is selected from the group consisting of Cu, Tc, Gd, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, ~~Pb~~, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, and Ti, ~~and the lanthanide group of elements in the Periodic Table such as Sm, Ho, Tb, Se.~~

33. (Currently Amended) A compound according to claim 32, wherein the metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, Gd, Ga, Fe, Co, Ti and ~~other radionuclides from the Lanthanides, Re, Sm, Ho and Y.~~

34. (Previously Presented) A compound according to claim 33, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

35. (Currently Amended) A method ~~radioimaging of diagnosis or therapy in a subject~~ comprising administering to a said-subject an effective amount of a radiolabelled metal ion complex of a compound, wherein said compound has ~~having~~ the structure



or a pharmaceutically acceptable salt thereof.

Application No.: 09/869,777
Response dated September 3, 2004
Reply to Office Action mailed May 3, 2004

36. (Currently Amended) The method of claim 35, wherein said metal ion is selected from the group consisting of Cu, Tc, Gd, Ga, In, ~~Y~~, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, ~~Pb~~, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, and Ti, ~~and the lanthanide group of elements in the Periodic Table such as Sm, Ho, Tb, Se.~~

37. (Currently Amended) The method of claim 36, wherein the metal ion is a radionuclide selected from the group consisting of ⁶⁴Cu, ⁶⁷Cu, Tc, In, Gd, Ga, Fe, Co, Ti, and ~~other radionuclides from the Lanthanides, Re, Sm, Ho and Y.~~

38. (Previously Presented) The method of claim 37, wherein the radionuclide is selected from ⁶⁴Cu and ⁶⁷Cu.

39-48. Canceled.

49. (Previously Presented) A compound according to claim 3, wherein the molecular recognition unit is selected from the group consisting of an antibody, protein, peptide, carbohydrate, nucleic acid, oligonucleotide, oligosaccharide and liposome.

50. (Previously Presented) A compound according to claim 3, wherein W is NH.

51. (Currently Amended) A compound according to claim 3, wherein said compound is complexed with a metal ion selected from the group consisting of Cu, Tc, Ga, In, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Zn, Cd, Mn, Ru, Pd, Hg, Ti, Y and Sc.

52. (Currently Amended) A compound according to claim ~~3~~ 51, wherein n is 3 or 4 and the compound is complexed with a the metal ion is selected from ~~Cu, Tc, Gd, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, Ti, and the lanthanide group of elements in the Periodic Table such as Sm, Ho, Tb, Se.~~

53. (Currently Amended) A compound according to claim 51, wherein the metal ion is selected from the group consisting of Cu, Tc, Gd, Ga, In, ~~Y~~, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, ~~Pt~~, Zn, Cd, Mn, Ru, Pd, Hg, Ti, and ~~the lanthanide group of elements in the~~

Application No.: 09/869,777
Response dated September 3, 2004
Reply to Office Action mailed May 3, 2004

~~Periodic Table such as Sm, Ho, Tb, Sc.~~

54. (Currently Amended) A compound according to claim 51 ~~52~~, wherein the metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, ~~Gd~~, Ga, Fe, Co, Ti, ~~and other radionuclides from the Lanthanides, including Re, Sm, Ho and Y.~~

55. (Previously Presented) A compound according to claim 54, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

56. (Currently Amended) A pharmaceutical composition for radioimaging comprising a compound of Formula (I) compound according to claim 3, a pharmaceutically acceptable salt thereof, or a radiolabelled complex thereof, together with a pharmaceutically acceptable carrier.

57. (Currently Amended) A diagnostic composition for radiodiagnosis comprising a radiolabelled complex of a compound of Formula (I) ~~compound~~ according to claim 3, or a pharmaceutically acceptable salt thereof, ~~or a radiolabelled complex thereof~~, and a reducing agent, together with a pharmaceutically acceptable carrier.

58. (Currently Amended) A method of diagnosing a disease ~~diagnosis or therapy in a~~ subject comprising administering to a ~~the~~ subject an effective amount of a ~~metal complex or~~ radiolabelled complex of a compound of Formula (I) according to claim 3, or a pharmaceutically acceptable salt thereof, and determining whether or not said subject has the disease.

59. (Currently Amended) The method of claim 58, wherein said metal ion is a radionuclide selected from the group consisting of Cu, Tc, ~~Gd~~, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, ~~Pt~~, Zn, Cd, Mn, Ru, Pd, Hg, Ti, and ~~the lanthanide group of elements in the Periodic Table such as Sm, Ho, Tb, Sc.~~

60. (Currently Amended) The method of claim 59, wherein the metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, ~~Gd~~, Ga, Fe, Co, Ti ~~and other radionuclides from the Lanthanides, Re, Sm, Ho and Y.~~

61. (Previously Presented) The method of claim 60, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

Application No.: 09/869,777
Response dated September 3, 2004
Reply to Office Action mailed May 3, 2004

62. (Currently Amended) A method of radioimaging a subject comprising administering to said subject an effective amount of a ~~metal complex or radiolabelled metal ion~~ metal ion complex of a compound of Formula (I) according to claim 3, or a pharmaceutically acceptable salt thereof.

63. (Currently Amended) A compound according to claim ~~32~~ 34, wherein the metal ion is selected from the group consisting of Cu, Tc, ~~Gd~~, Ga, In, Y, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, ~~Pb~~, Ir, ~~Pt~~, Zn, Cd, Mn, Ru, Pd, Hg, and Ti, ~~and the lanthanide group of elements in the Periodic Table such as Sm, Ho, Tb, Se.~~

64. (Currently Amended) A pharmaceutical composition comprising a compound according to claim 30, or a pharmaceutically acceptable salt thereof, a metal ion complex thereof, or a radiolabelled complex thereof, together with a pharmaceutically acceptable carrier.

65. (Currently Amended) A diagnostic composition comprising a radiolabelled metal ion complex of a compound according to claim 30, or a pharmaceutically acceptable salt thereof, ~~or a radiolabelled complex thereof~~, and a reducing agent, together with a pharmaceutically acceptable carrier.

66. (Cancelled)

67. (Previously Presented) A compound according to claim 30, wherein the molecular recognition unit is selected from the group consisting of an antibody, protein, peptide, carbohydrate, nucleic acid, oligonucleotide, oligosaccharide and liposome.

68. (Previously Presented) A compound according to claim 67, wherein the molecular recognition unit is an antibody.

69. (Previously Presented) A conjugate compound comprising at least one compound of Formula (I) according to claim 3, or a metal complex, or radiolabelled complex, or a pharmaceutically acceptable salt thereof, bonded to at least one molecular recognition unit comprising an antibody, protein, peptide, carbohydrate, oligonucleotide or oligosaccharide.

70. (Previously Presented) A conjugate compound comprising a compound according to claim 30, or a metal complex, or radiolabelled complex, or a pharmaceutically

acceptable salt thereof, bonded to at least one molecular recognition unit comprising an antibody, protein, peptide, carbohydrate, oligonucleotide or oligosaccharide.

71. (Previously Presented) A compound according to claim 70, wherein the molecular recognition unit is an antibody.

72. (Currently Amended) A method of radioimaging a subject comprising administering to said subject an effective amount of a ~~metal complex~~ or radiolabelled metal ion complex of a conjugate compound according to claim 69, or a pharmaceutically acceptable salt thereof.

73. (Currently Amended) A method of radioimaging a subject comprising administering to said subject an effective amount of a ~~metal complex~~ or radiolabelled metal ion complex of a conjugate compound according to claim 70, or a pharmaceutically acceptable salt thereof.

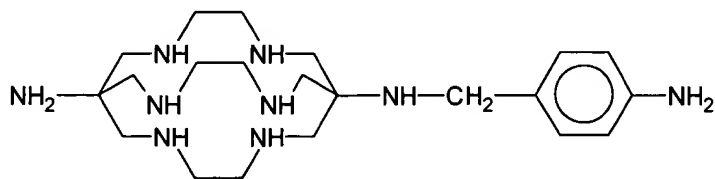
74. (Currently Amended) A pharmaceutical composition comprising a conjugate compound or a metal ion complex thereof according to claim 69, together with a pharmaceutically acceptable carrier.

75. (Currently Amended) A pharmaceutical composition comprising a conjugate compound or a metal ion complex thereof according to claim 70, together with a pharmaceutically acceptable carrier.

76. (Cancelled)

77. (Cancelled)

78. (New) A method of radiotherapy of cancer comprising administering to a subject an effective amount of a radiolabelled metal ion complex of a compound, wherein said compound has the structure



or a pharmaceutically acceptable salt thereof.

79. (New) The method of claim 78, wherein said radiolabelled metal ion is a radionuclide selected from the group consisting of Cu, Ga, In, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Ir, Zn, Cd, Mn, Ru, Pd, Hg, and Ti.

80. (New) The method of claim 79, wherein the metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , In, Ga, Fe, Co, Ti, and Re.

81. (New) The method of claim 80, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

82. (New) The method of claim 62, wherein said metal ion is a radionuclide selected from the group consisting of Cu, Tc, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Zn, Cd, Mn, Ru, Pd, Hg, Ti, Lu, and Sc.

83. (New) The method of claim 82, wherein said radionuclide is selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, Ga, Fe, Co, Ti, Re, Lu and Y.

84. (New) The method of claim 83, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

85. (New) A method of radiotherapy of a disease comprising administering to a subject an effective amount of a radiolabelled metal ion complex of a compound of Formula (I) according to claim 3, or a pharmaceutically acceptable salt thereof.

86. (New) The method of claim 85, wherein said metal ion is a radionuclide selected from the group consisting of Cu, Tc, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, Ti, Sc, Sm and Lu.

87. (New) The method of claim 86, wherein the metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, Ga, Fe, Co, Ti, Re, Sm, Lu and Y.

88. (New) The method of claim 87, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

89. (New) The method according to claim 85, wherein n is 3 or 4 and the compound is complexed with a radiolabelled metal ion selected from the lanthanide group of elements in the Periodic Table.

90. (New) A method of radiotherapy of cancer comprising administering to a subject an effective amount of a radiolabelled metal ion complex of a conjugate compound according to claim 69, or pharmaceutically acceptable salt thereof.

91. (New) A method of radiotherapy of cancer comprising administering to a subject an effective amount of a radiolabelled metal ion complex of a conjugate compound according to claim 70, or pharmaceutically acceptable salt thereof.

92. (New) A method of radioimaging cancer comprising administering to a subject an effective amount of a radiolabelled complex of a compound of Formula (I) according to claim 30, or a pharmaceutically acceptable salt thereof.

93. (New) The method of claim 91, wherein said metal ion is a radionuclide selected from the group consisting of Cu, Tc, Ga, In, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Ir, Zn, Cd, Mn, Ru, Pd, Hg, and Ti.

94. (New) The method of claim 93, wherein the metal ion is a radionuclide selected from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, Ga, Fe, Co, Ti, and Re.

95. (New) The method of claim 94, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

96. (New) A method of diagnosing cancer comprising administering to a subject an effective amount of a radiolabelled complex of a compound of Formula (I) according to claim 30, or a pharmaceutically acceptable salt thereof, and determining whether or not the subject has cancer

97. (New) A method of radiotherapy of cancer comprising administering to a subject an effective amount of a radiolabelled metal ion complex of a compound of Formula (I) according to claim 3, or a pharmaceutically acceptable salt thereof.

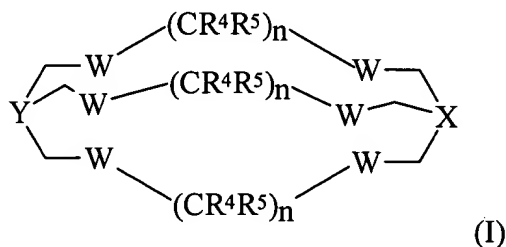
98. (New) The method of claim 97, wherein said metal ion is a radionuclide selected from the group consisting of Cu, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, Ti, Sc.

99. (New) The method of claim 98, wherein the metal ion is a radionuclide selected

from the group consisting of ^{64}Cu , ^{67}Cu , Tc, In, Ga, Fe, Co, Ti, Re, Sm, Lu and Y.

100. (New) The method of claim 99, wherein the radionuclide is selected from ^{64}Cu and ^{67}Cu .

101. (New) A compound which is capable of being radiolabelled of general Formula (I):



in which n represents an integer from 2 to 4,

where each R^4 and R^5 is independently selected from -H, CH_3 , COOH , NO_2 , CH_2OH , H_2PO_4 , HSO_3 , CN , $\text{C}(=\text{O})\text{NH}_2$ and CHO ;

X and Y are the same or different and are selected from the group consisting of C-R, N, P and C-Z in which R is selected from hydrogen, halogen, hydroxyl, nitro, nitroso, amino, optionally substituted alkyl, optionally substituted aryl, optionally substituted aralkyl, cyano, - COOR' , COCOOR' , $\text{NH-COCH}_2\text{Br}$, $\text{-NH-CO-CH=CH-COOR}'$ in which R' is a hydrogen atom or alkyl group, wherein at least one of X and Y is C-Z;

W is selected from the group consisting of NH, S and O; and

Z is a functionalised group which is capable of binding said compound of formula (I) to a molecular recognition unit, selected from $\text{-NH-(CH}_2)_p\text{-Ar-NH}_2$ and $\text{-NH-(CH}_2)_p\text{-Ar-NCS}$, wherein p is an integer from 1 to 4 and Ar is optionally substituted phenyl;

wherein said optional substituents are selected from the group consisting of amino, halogen, hydroxy, mercapto, nitro, cyano, thiocyno, alkyl, alkoxy, halogenoalkyl, acyl, acylamino, acyloxy, carboxyl, alkoxy-carboxyl, carbamoyl, pyridoylamino, carboxyalkyl-carbamoyl, N-carboxyalkylcarbamoyl, sulfo, sulfamoyl, mono- or di-alkylated or phenylated sulfamoyl optionally having one or more alkyl substituents, alkylsulfonfyl, alkoxy-sulfonfyl,

Application No.: 09/869,777
Response dated September 3, 2004
Reply to Office Action mailed May 3, 2004

optionally hydroxy-containing phenylsulfonyl or phenoxysulfonyl;
or a pharmaceutically acceptable salt thereof.

102. (New) A compound according to claim 101, wherein said compound is complexed with a metal ion selected from the group consisting of Cu, Tc, Ga, In, Y, Co, Re, Fe, Au, Ag, Rh, Pt, Bi, Cr, W, Ni, V, Pb, Ir, Pt, Zn, Cd, Mn, Ru, Pd, Hg, Ti, and Sc.

103. (New) A compound according to claim 101, wherein n is 3 or 4 and the compound is complexed with a metal ion selected from the lanthanide group of elements in the Periodic Table.